

**CPIM**

CENTER FOR PUBLIC INVESTMENT MANAGEMENT



A PROGRAM BROUGHT TO YOU BY:

**JOSH MANDEL**

TREASURER OF OHIO

# Examining the Fed and Rising Interest Rates

## INV 330

# Presenters

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# Agenda

- History of the Fed
- Fed Mandates
- Current Complexion of the Fed
- What's Next?

# History of the Fed

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# HISTORY OF THE FED

- No central bank (Federal Reserve) in America
- Knickerbocker Trust loaning out 99% of its reserves
- Run on Banks
- Banks did not have enough cash on reserves
- JP Morgan bailed out the banking system

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# HISTORY OF THE FED

- 6 influential banking leaders get together on Jekyll Island, GA
- First U.S. Central Bank (Federal Reserve) was created
- Bank had a bad name, so they called it the Federal Reserve to make it sound official
- All banks have to play by the same rules...every bank has to keep the same percentage of deposits on hand

**Operated the same until 2008**

CHRISTIE'S

LEHMAN BROTHERS

Two workers carry the Lehman Brothers corporate logo away Sept. 24, 2010, in London, England. (Oli Scarff/Getty Images)

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# HISTORY OF THE FED

- Financial Services Regulatory Relief Act goes into effect

Congress allows the Fed to pay interest on required reserves  
AND excess reserves

- Roughly \$1.6 billion in excess reserves.
- Roughly \$68 billion in required reserves.

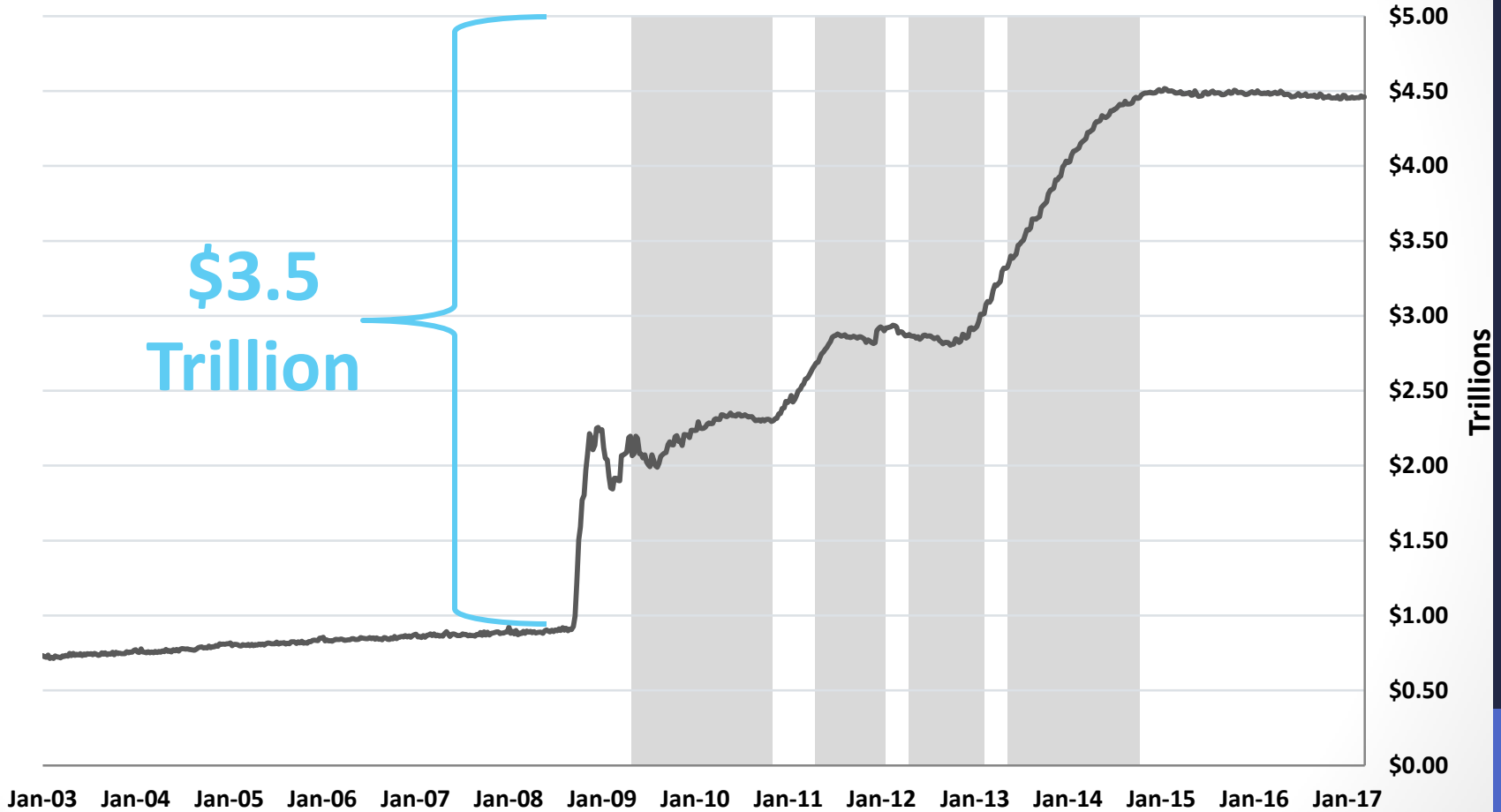


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# QUANTITATIVE EASING BEGINS

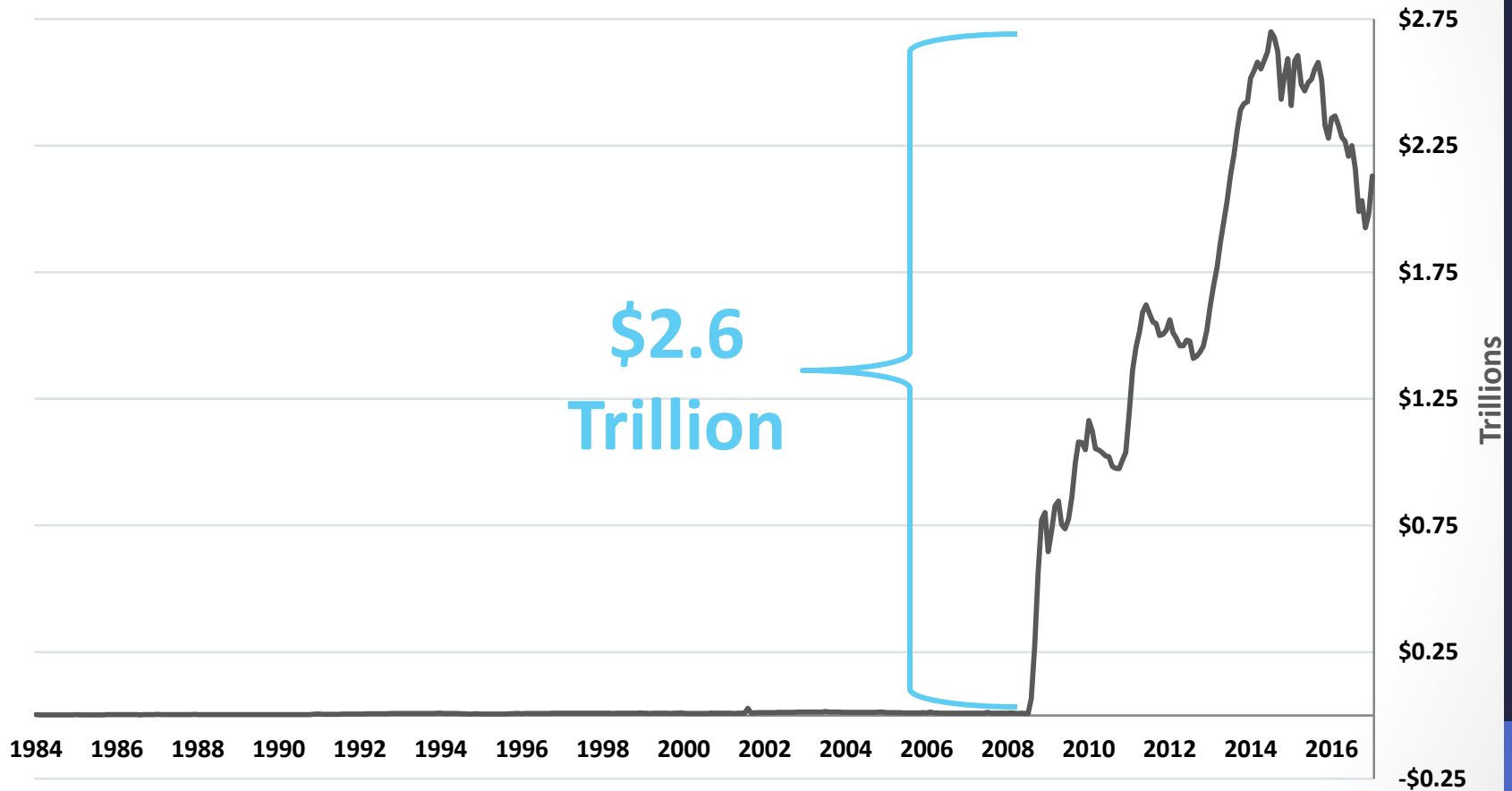


# FED BALANCE SHEET



Source: Board of Governors of the Federal Reserve System (US)

# EXCESS RESERVES OF DEPOSITORY INSTITUTIONS



# Fed Mandates

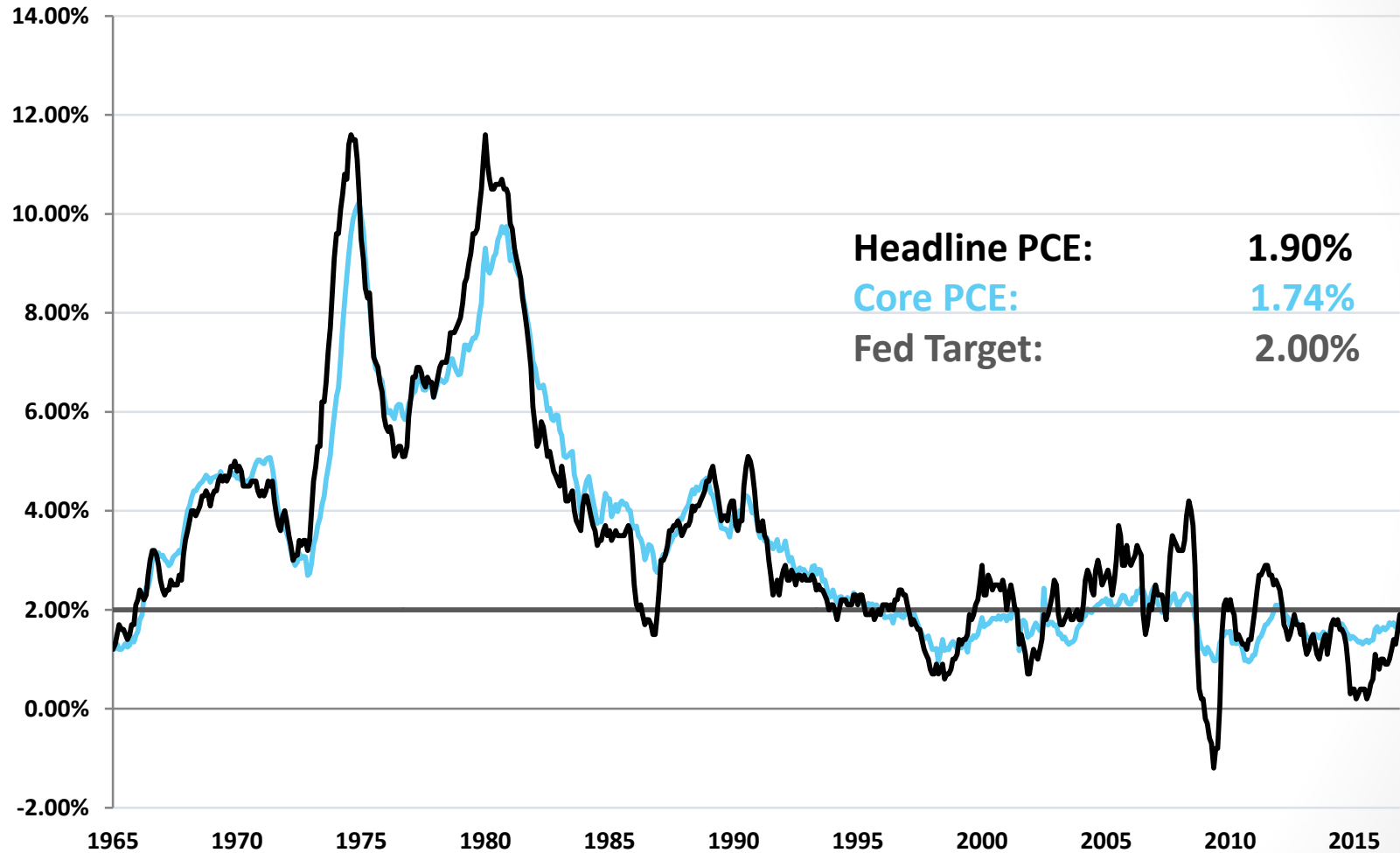
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# MANDATE OF THE FED

- Price Stability/Inflation
- Employment
- Rate Stabilization/Manage Bubbles

# Inflation

# INFLATION



# INFLATION

10 Year Treasury Yield





# TRADE IMPORTS

What Does the U.S. Import From the Rest of the World?

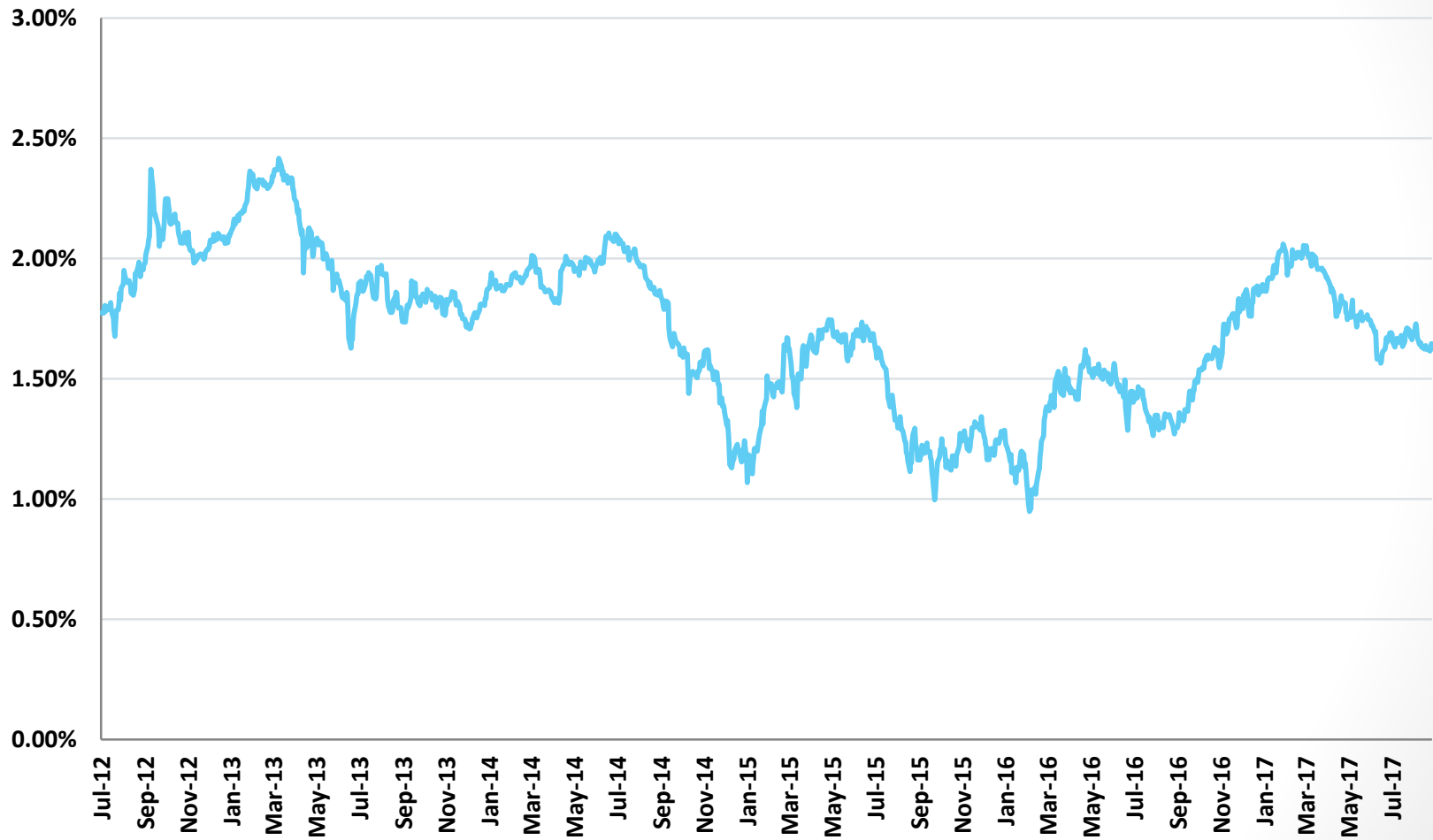
US imports as a percent of total imports from each country by end-use classification				
Exporter:	Most important US imports	Second most important imports	Third most important imports	Fourth most important imports
Mexico	<u>Car parts</u>	<u>Trucks and buses</u>	<u>Cars</u>	Computers
Germany	<u>Cars</u>	Pharma	Airplanes	<u>Car parts</u>
Japan	<u>Cars</u>	<u>Car parts</u>	Machines	Airplanes
Korea	<u>Cars</u>	Cell phones	<u>Car parts</u>	Petroleum
Canada	Oil	<u>Cars</u>	Re-imports	<u>Car parts</u>
United Kingdom	Pharma	<u>Cars</u>	Re-imports	Airplanes
China	Cell phones	Apparel	Computers	Computer access.

Source: Census Bureau 2015, DB Global Markets Research

You cannot invest directly in an index.

# INFLATION OUTLOOK

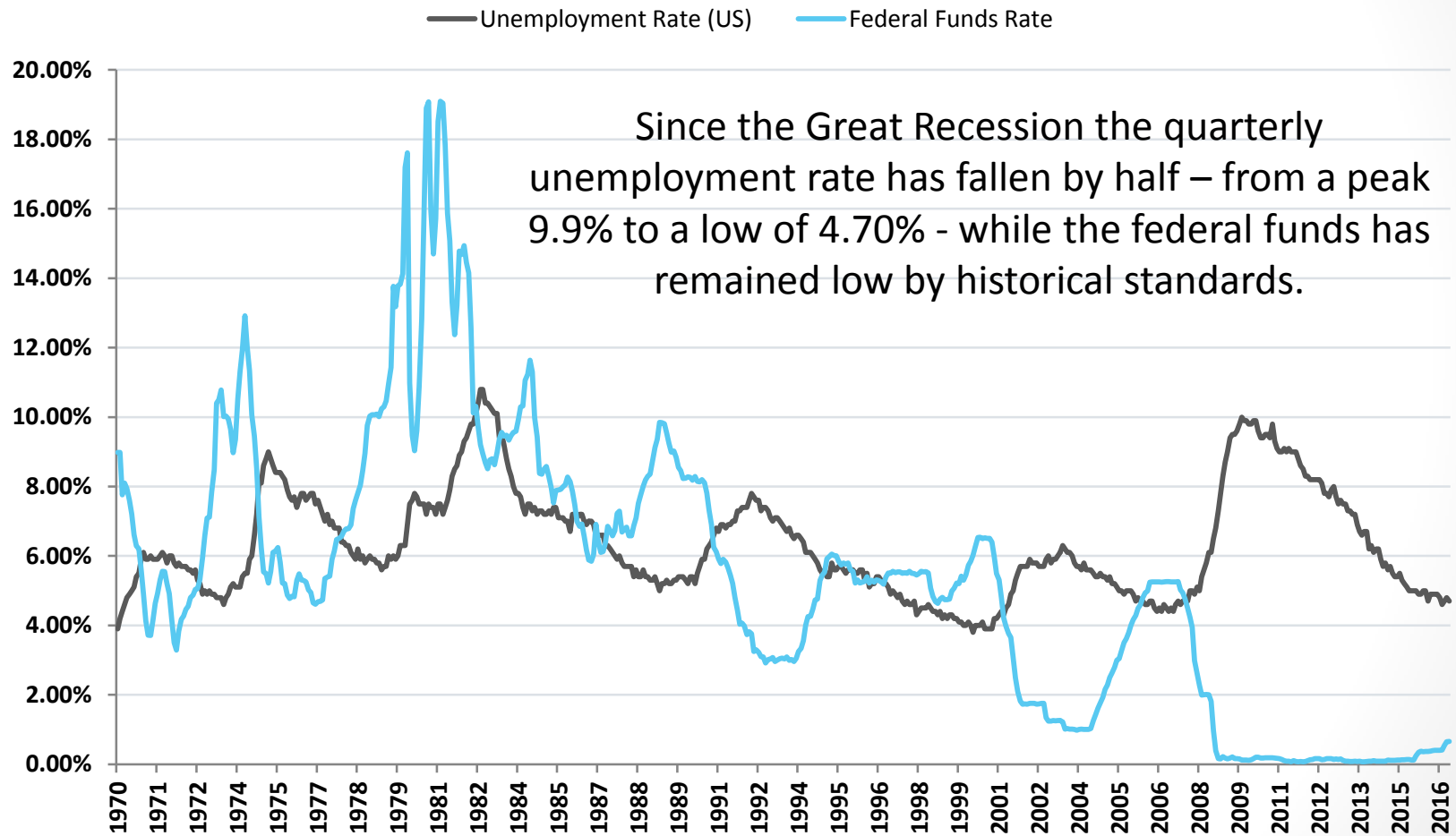
U.S. 5-Year Breakeven Index



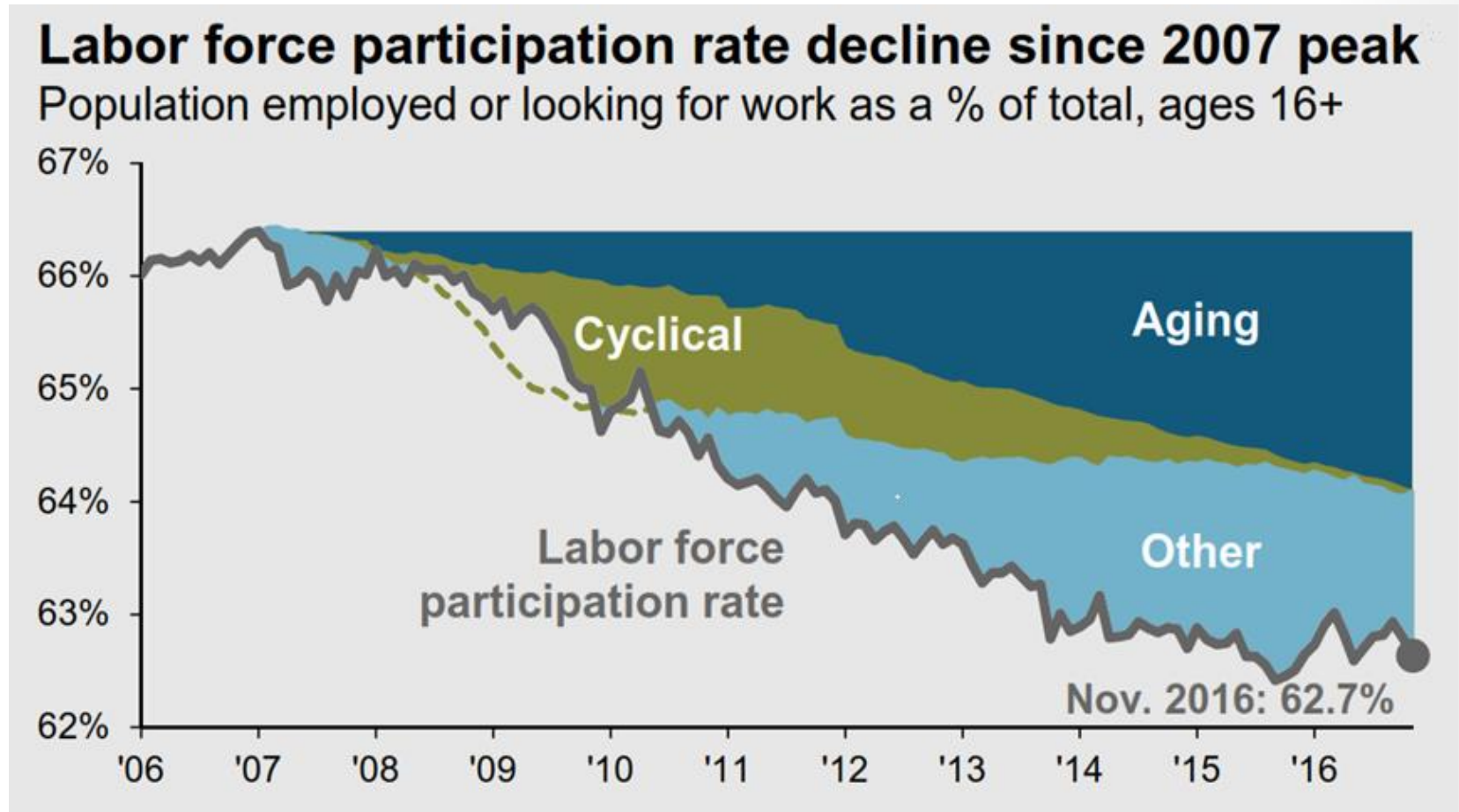
# Unemployment

# UNEMPLOYMENT

Federal Funds Rate and Unemployment Rate, 1971-2016



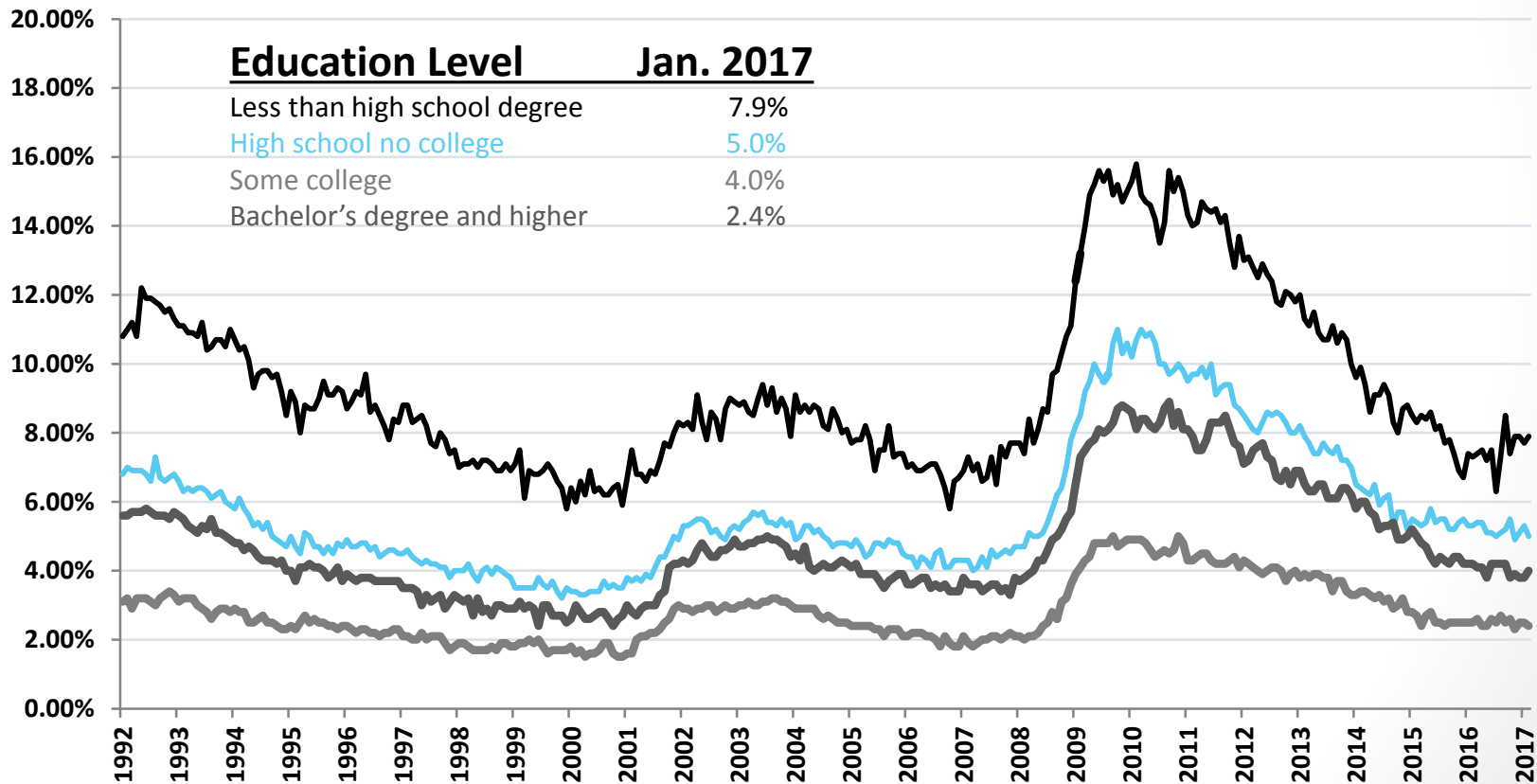
# FED MANDATE: UNEMPLOYMENT



# UNEMPLOYMENT BY EDUCATION LEVEL

Ages 25 and Greater

- Less than a High School diploma
- High School graduates, no college
- Some college or associate degree
- Bachelor's degree and higher

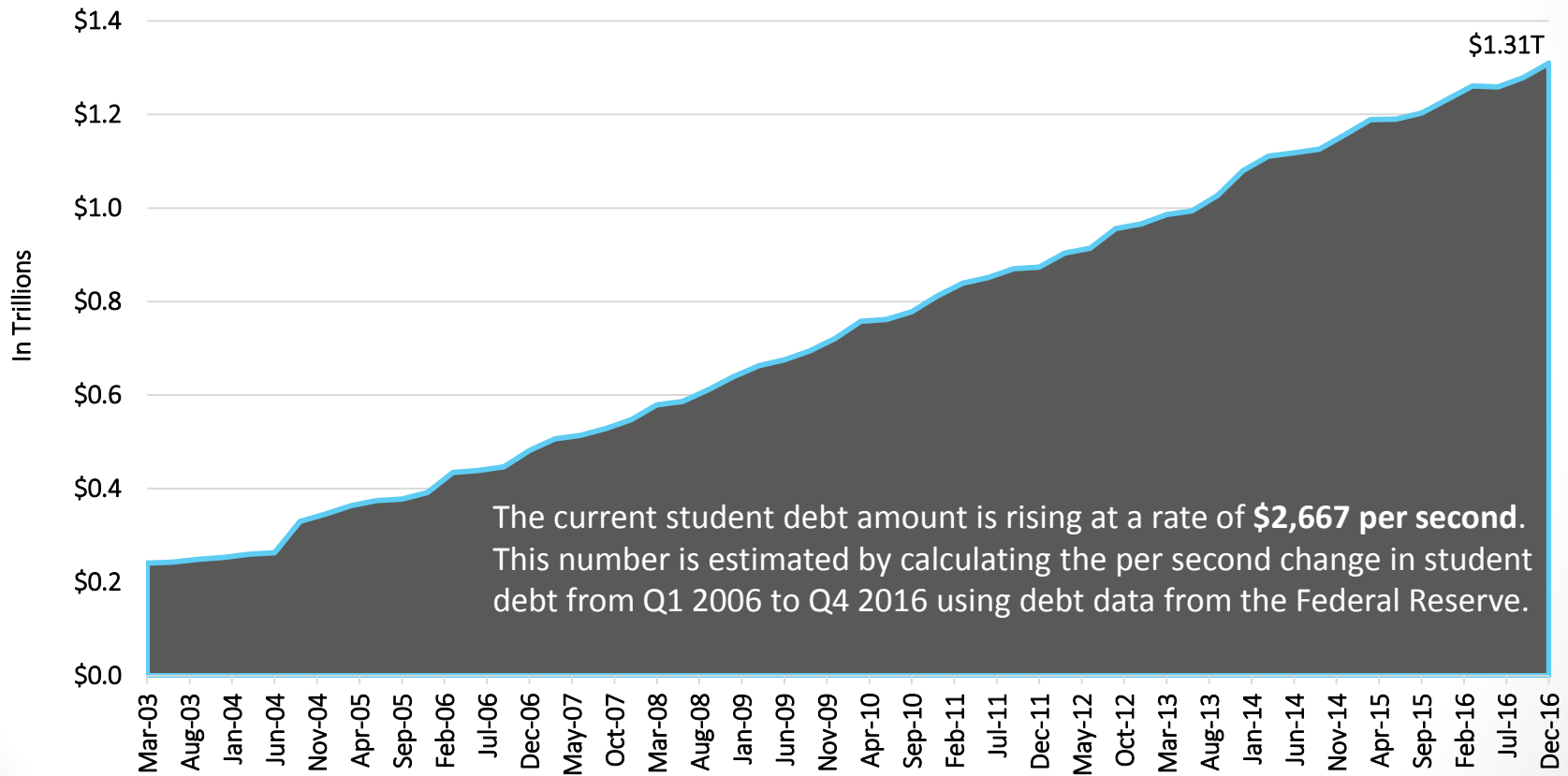


Source: Bureau of Labor Statistics

# Student Loans

# STUDENT LOAN DEBT

Outstanding student loan debt





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# STUDENT DEBT FACTS

- 66% of graduates from public colleges had on average \$25,550 debt
- 75% of graduates from non-profit colleges had on average \$32,300 debt
- 88% of graduates from for-profit colleges had on average \$39,950 debt
- Estimated 82% students used their student loan money for vacation, parties, electronics, and similar
- Over 2% of the US population = 7+ million defaulted on student loans
- Total Increase In Student Loan Debt In 4Q-2016: \$31 billion
- New Delinquent Balances (30+ days): \$32.6 billion

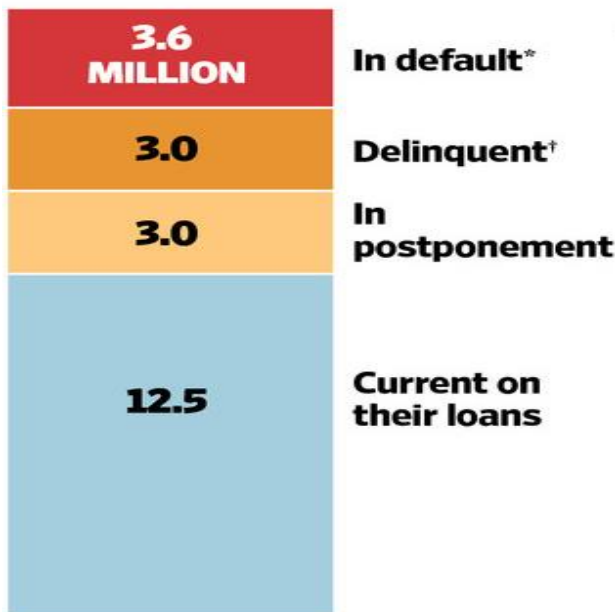
Source: <https://debtclock.tv/world/us/student-loan/>

# STUDENT DEBT FACTS

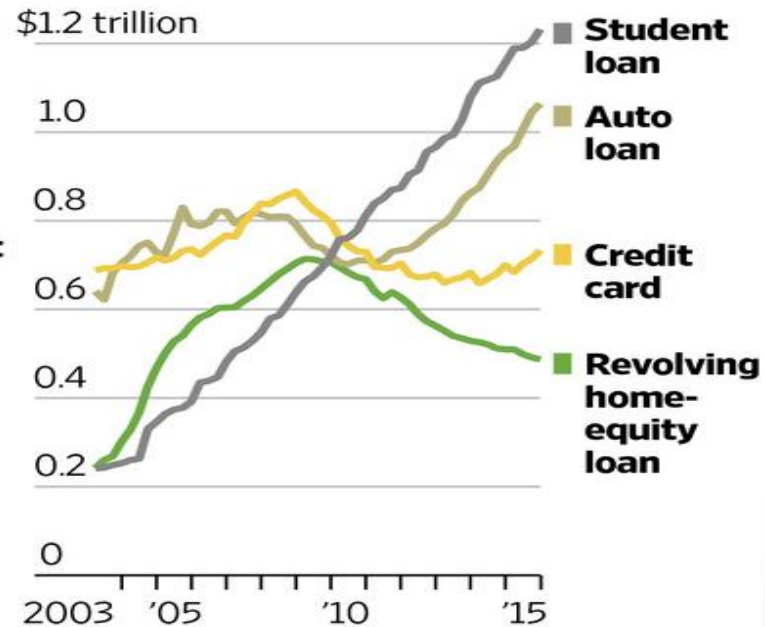
Failing to Repay

Some 43% of the roughly 22 million Americans with federal student loans were either behind or received permission to postpone payments due to economic hardship as of Jan. 1.

## Americans who are out of school and owe federal student loans



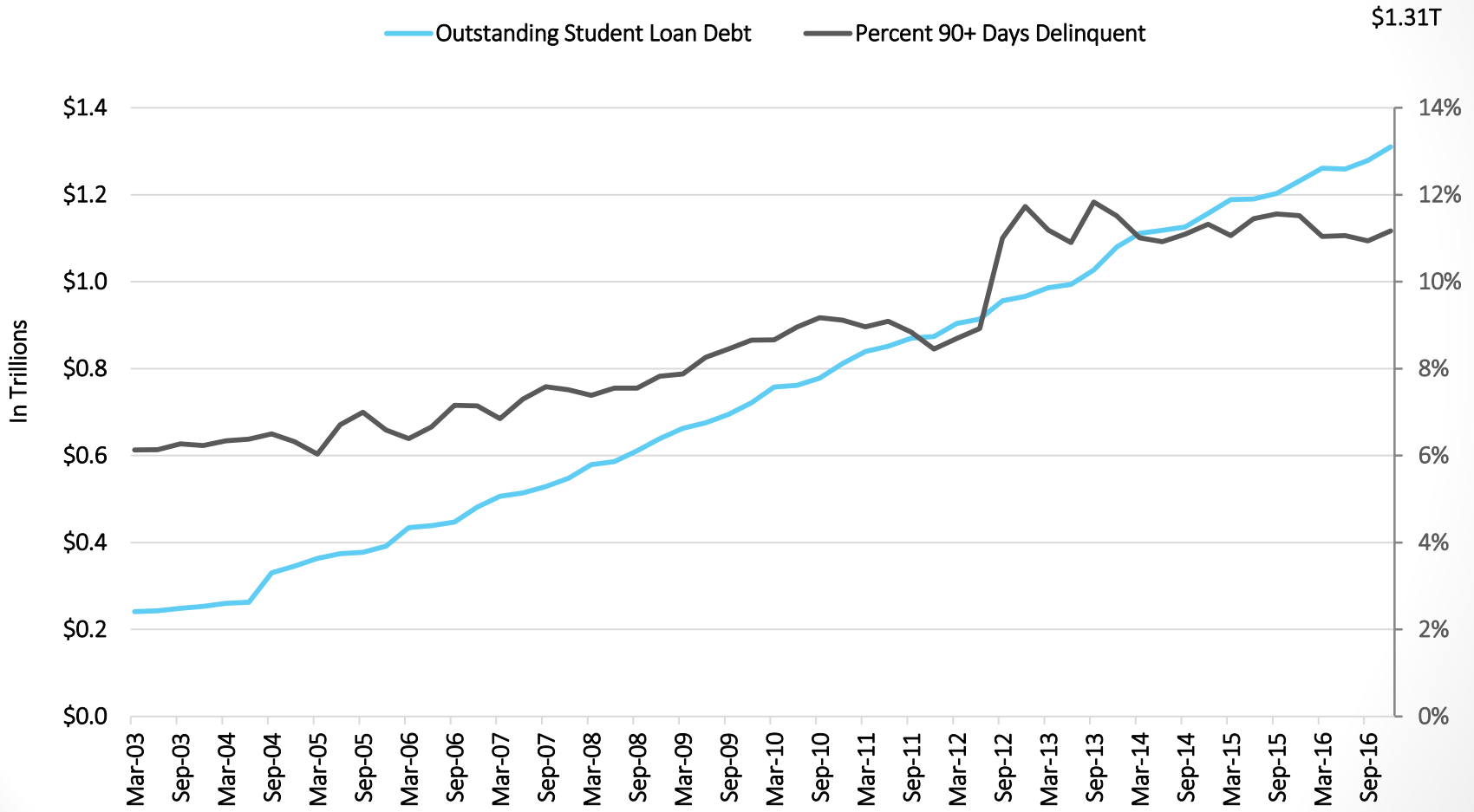
## Debt outstanding by type of consumer loan



\*At least 360 days behind on a payment †Between 31 days and 360 days behind on a payment  
 Sources: Education Department (student loans); Federal Reserve Bank of New York (debt outstanding)  
**THE WALL STREET JOURNAL.**

# STUDENT LOAN DELINQUENCY

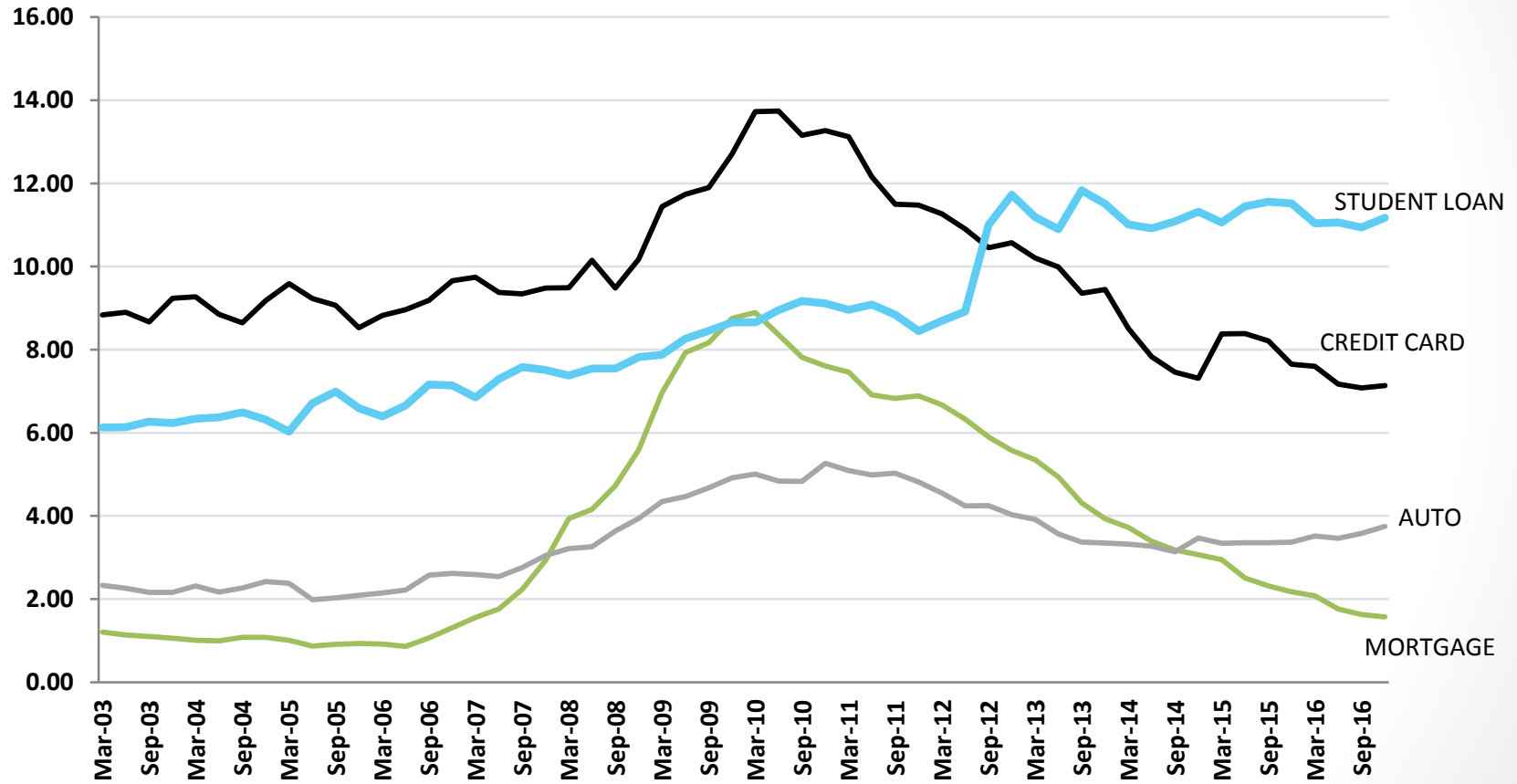
Student Loans 90+ Days Delinquent as Percent Loans Outstanding



Source: Federal Reserve Center for Microeconomic data as of March 2017

# CONSUMER CREDIT DELINQUENCIES

Percent Of Balance 90+ Days Delinquent By Loan Type



Source: Federal Reserve Center for Microeconomic data as of March 2017

# STUDENT DEBT STATISTICS

Average student loan debt by state

HIGH-DEBT STATES	
New Hampshire	\$36,101
Pennsylvania	\$34,798
Connecticut	\$34,773
Delaware	\$33,849
Rhode Island	\$32,920
Minnesota	\$31,526
Massachusetts	\$31,466
District of Columbia	\$31,452
South Carolina	\$30,564
Ohio	\$30,239

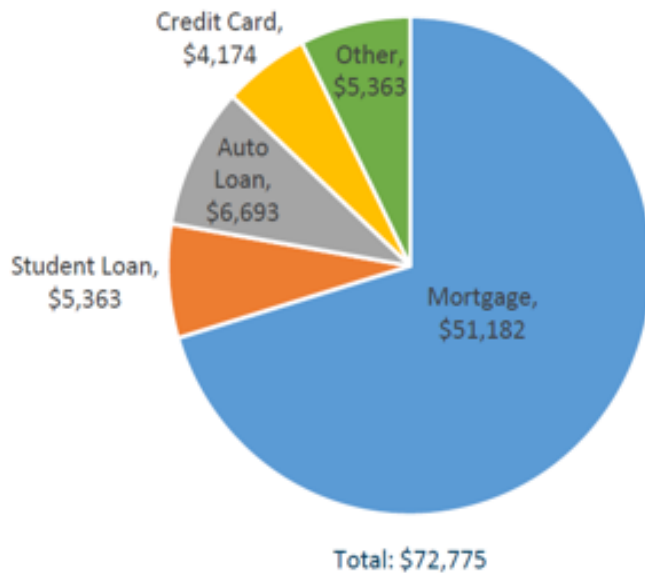
LOW-DEBT STATES	
Utah	\$18,873
New Mexico	\$20,193
California	\$22,191
Wyoming	\$22,683
Florida	\$23,379
Hawaii	\$23,456
Nevada	\$23,462
Arizona	\$23,780
Washington	\$24,600
Oklahoma	\$24,849

# CONSUMER DEBT BY CATEGORY

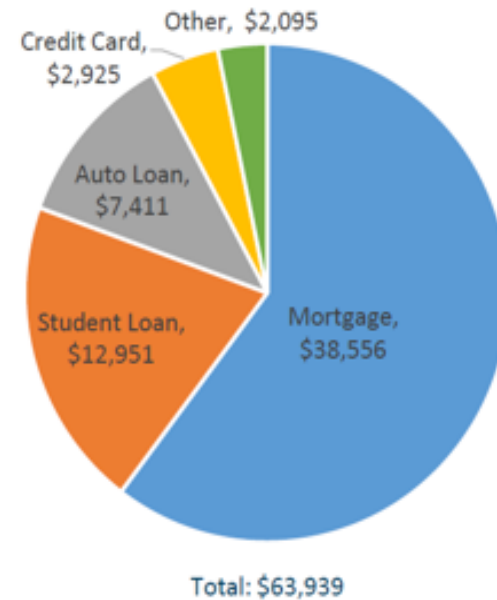
US Consumers Aged 25-34

The number of US consumers aged 25-34 with **student loan debt of at least \$50,000 doubled from 2005 to 2015**. During that same time, the **average student loan debt across all age 25-34 consumers also doubled** — by comparison, average credit card debt and mortgage debt for this population actually fell.

Average Debt by Category, October 2005, Age 25-34



Average Debt by Category, October 2015, Age 25-34



Source: FICO research

# Current Complexion of the Fed

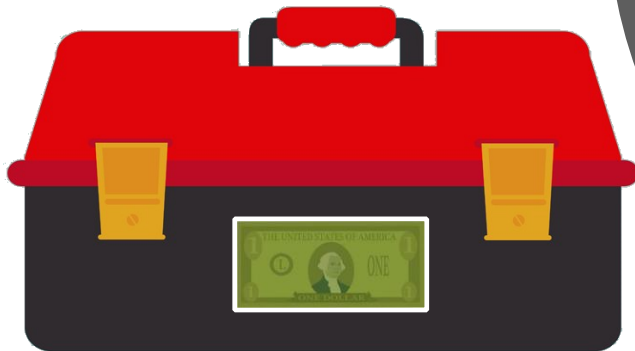
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# THE FED'S TOOLBOX

**Fractional Reserve  
Requirement**

**Set Federal Funds Rate**

**T-Bills**



**Macroprudential**

**FFR Under the Corridor  
System**

**Interest on Reserves**

**Reverse Repurchase  
Rate**



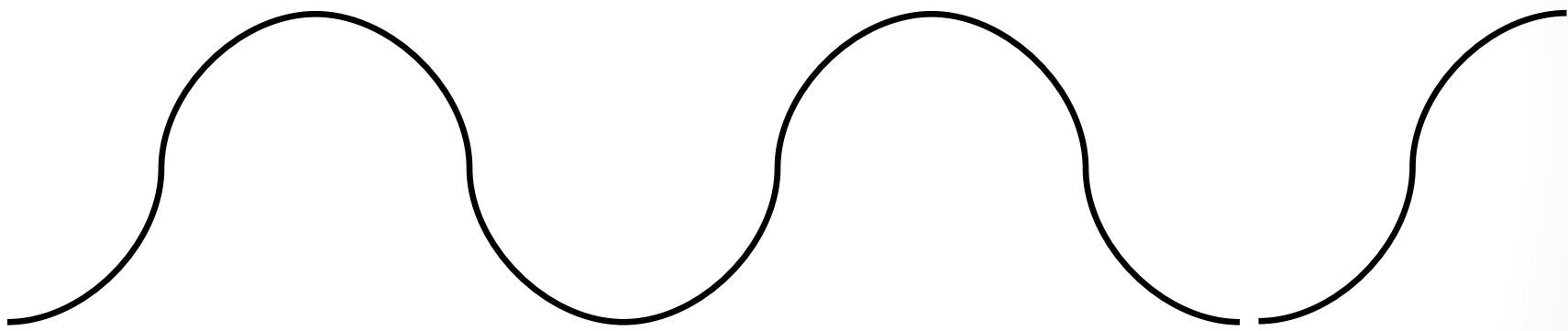
# FED FUNDS RATE UNDER THE CORRIDOR SYSTEM

Interest on Reserves

0 bp

50 bp

100 bp

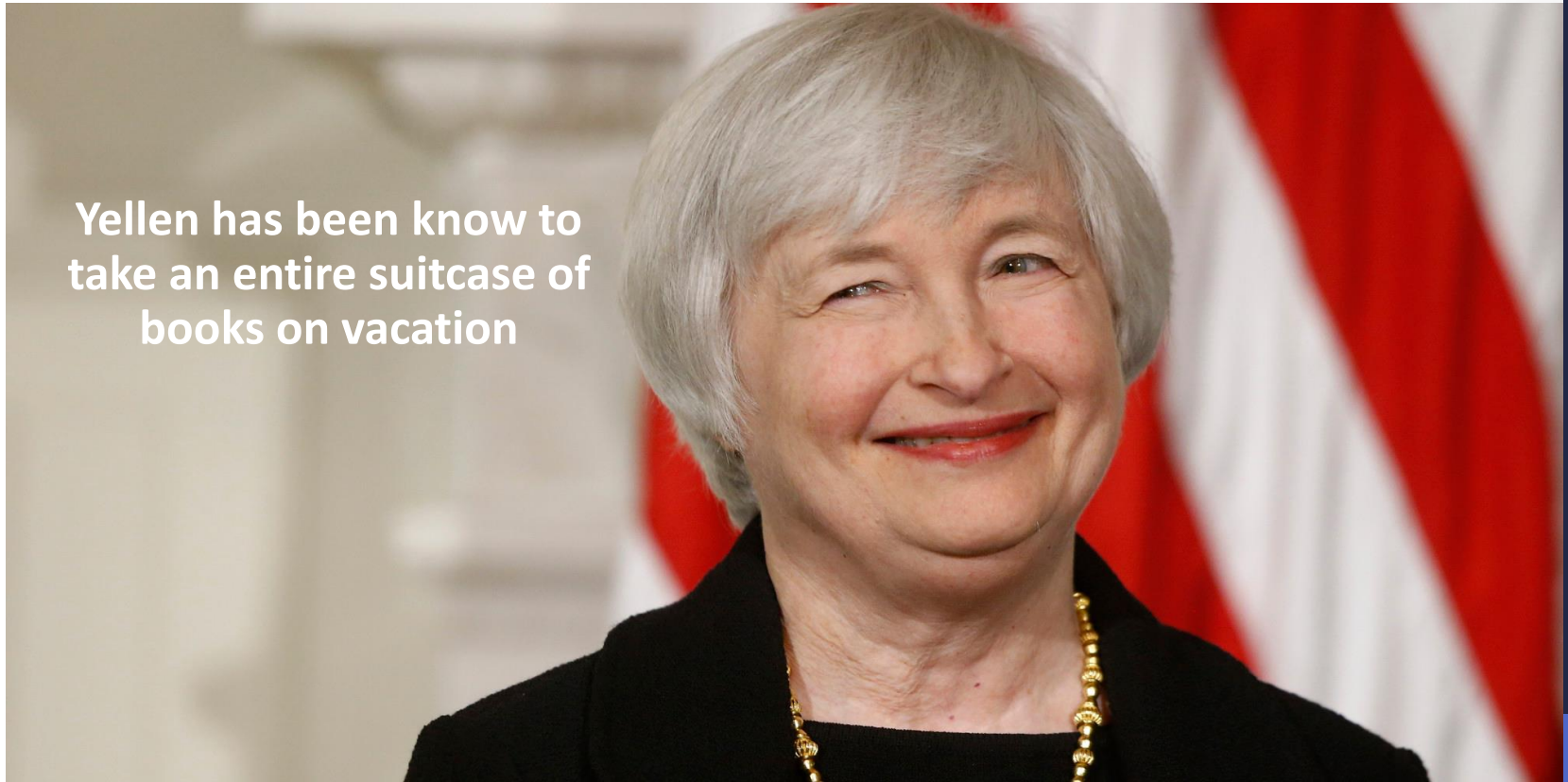


Reverse Repo Rate

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## FUN FED FACTS

Yellen has been know to take an entire suitcase of books on vacation



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## FUN FED FACTS

Yellen has a stamp collection estimated to be worth up to \$50,000



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# FUN FED FACTS



Paul Volcker

Alan Greenspan

Ben Bernanke

Janet Yellen

# FUN FED FACTS

Who Makes up the “Fed”?

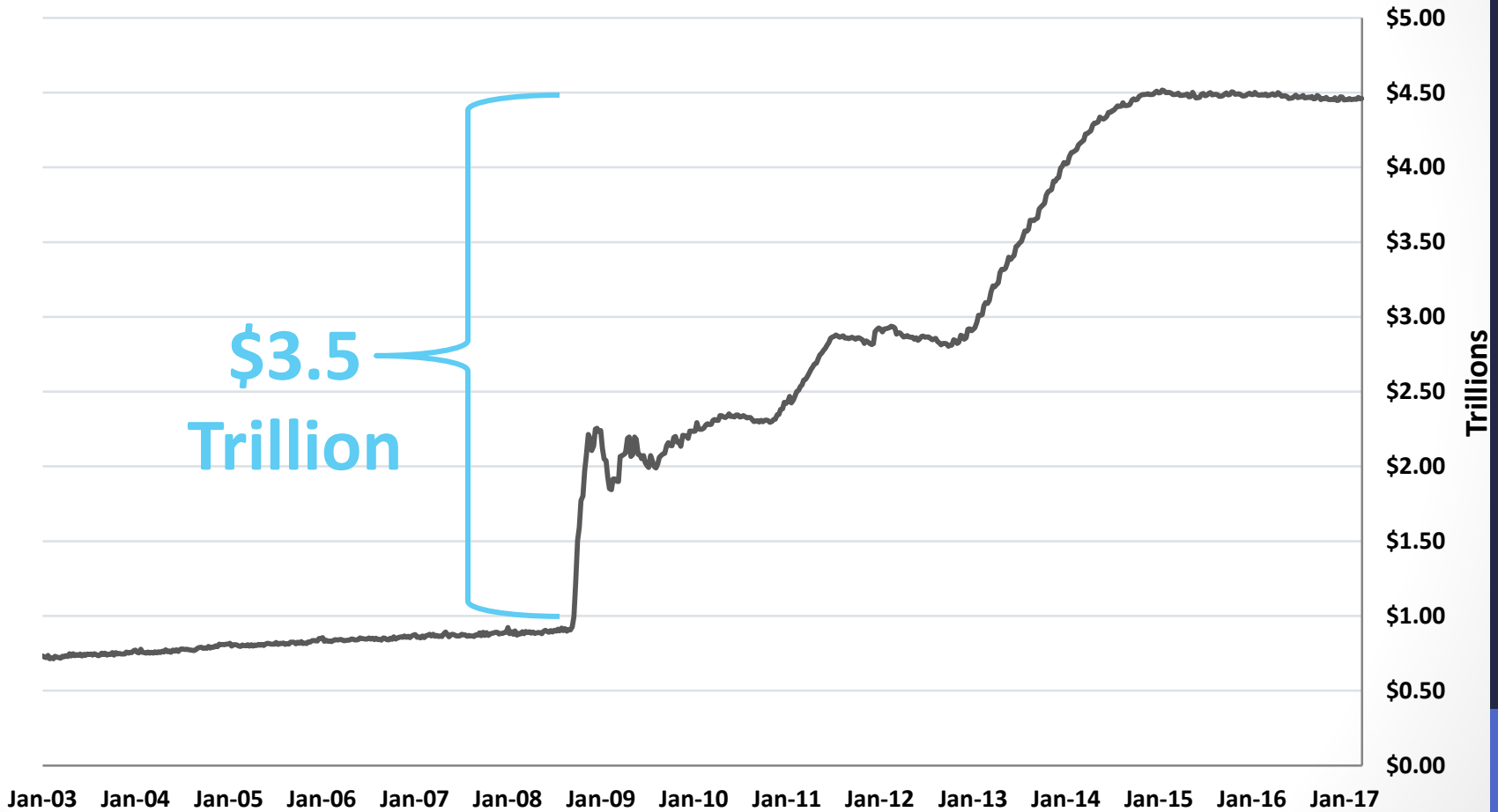
Federal Reserve Board of Governors	Term End (Chair and Vice Chair)	End of Term as Governor
Janet Yellen (Chair)	February 2018	2024
Stanley Fischer (Vice Chair)	June 2018	2020
Daniel Tarullo	Retiring April 2017	2022
Lael Brainard		2026
Jerome Powell		2028
Vacant		2018
Vacant		2030

FOMC District Bank Voters in 2017		District
William Dudley		New York
Patrick Harker		Philadelphia
Charles Evans		Chicago
Neel Kashkari		Minneapolis
Robert Kaplan		Dallas

# VOTER RELIABILITY



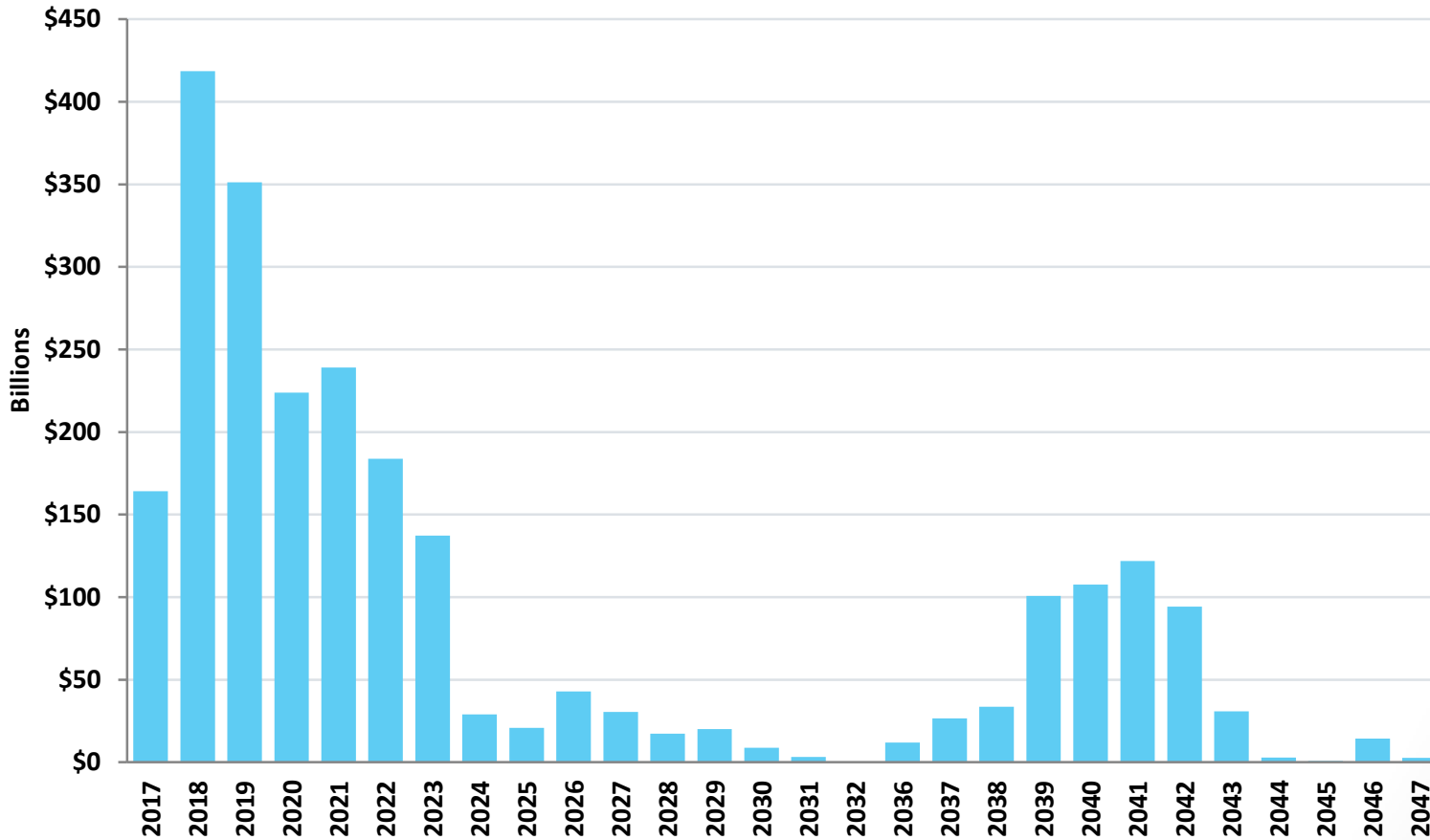
# FED BALANCE SHEET



# FED BALANCE SHEET

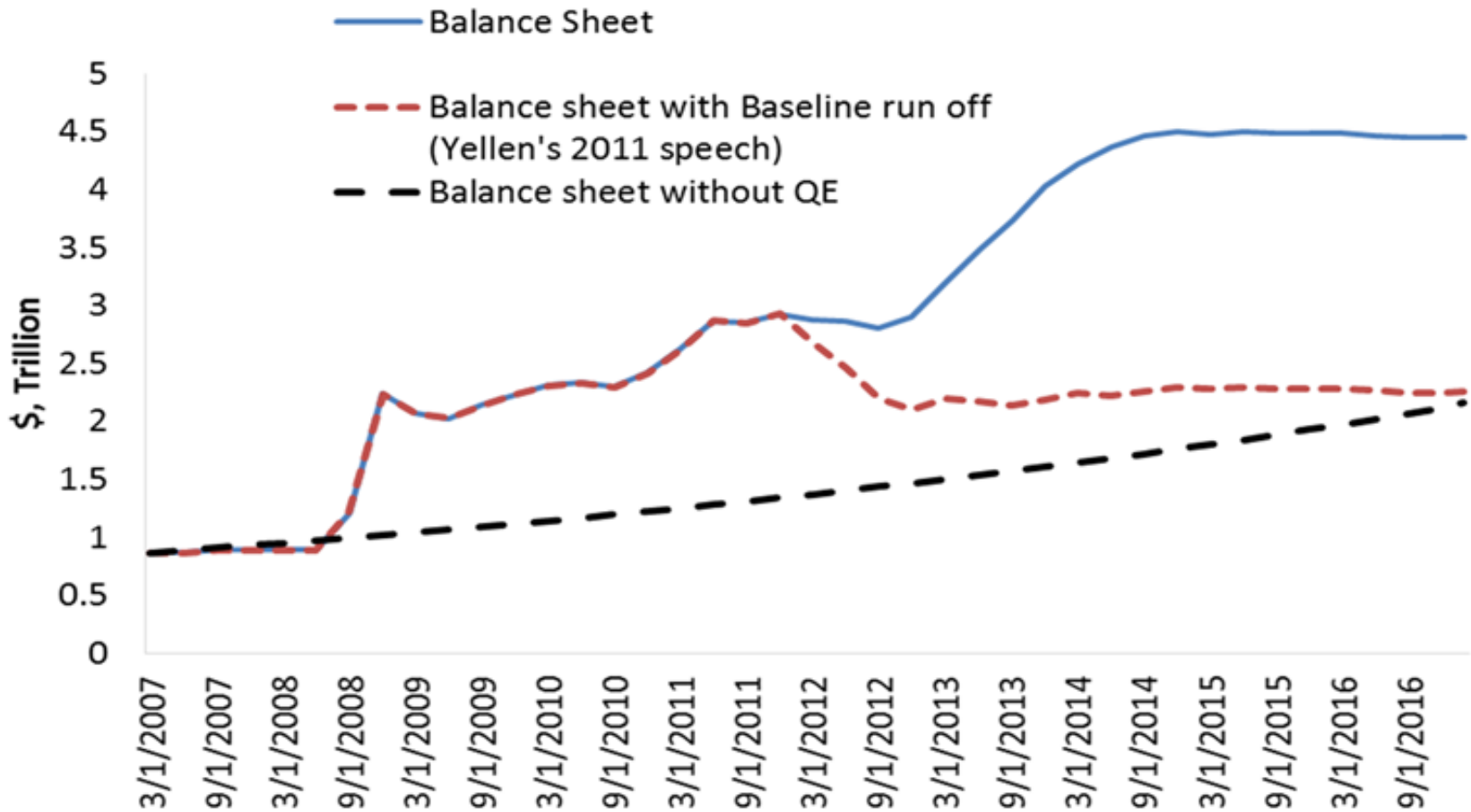
## Maturity Distribution of U.S. Treasuries

FEDERAL RESERVE TREASURY HOLDINGS

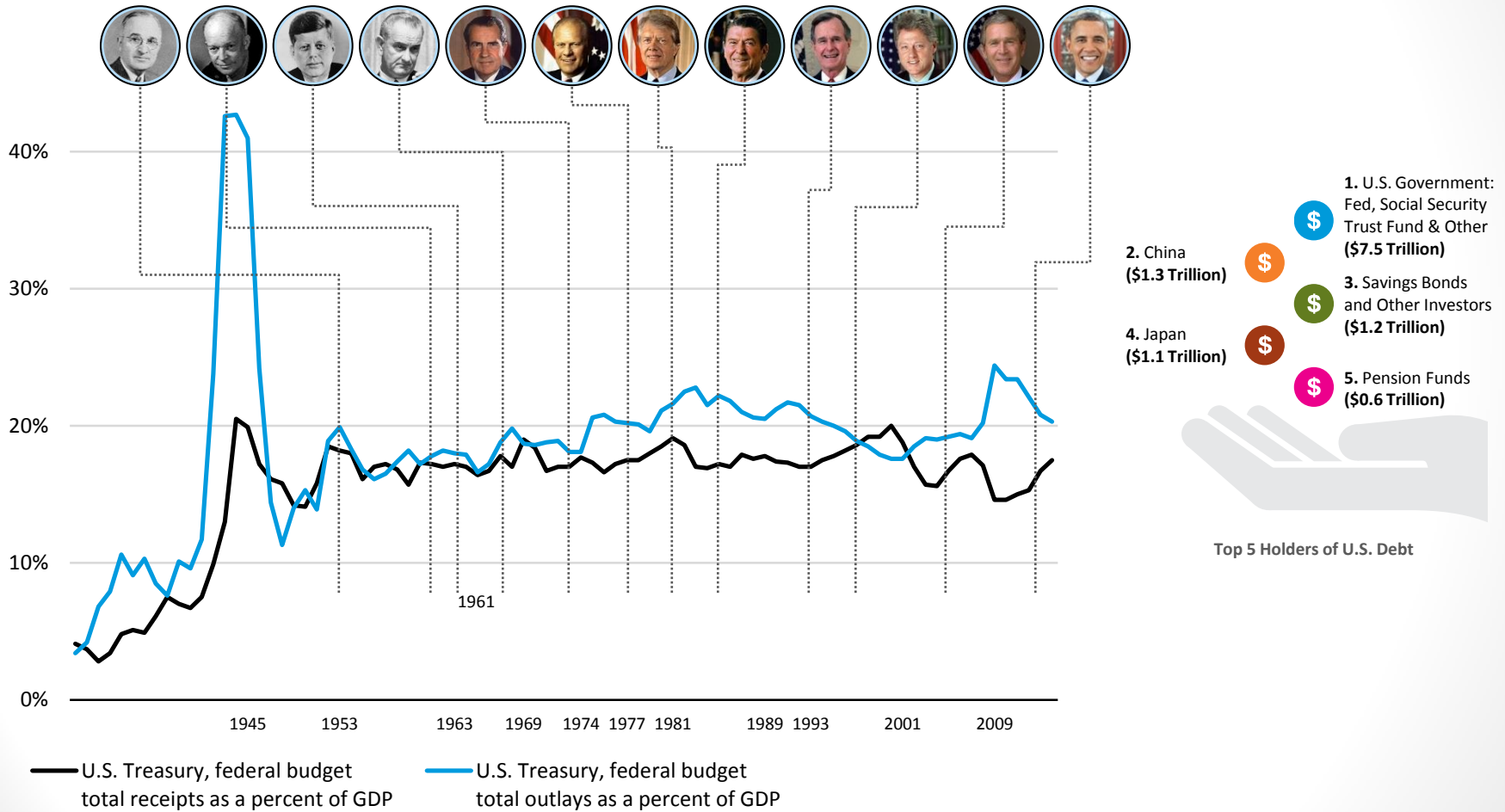




# FED CHOICES

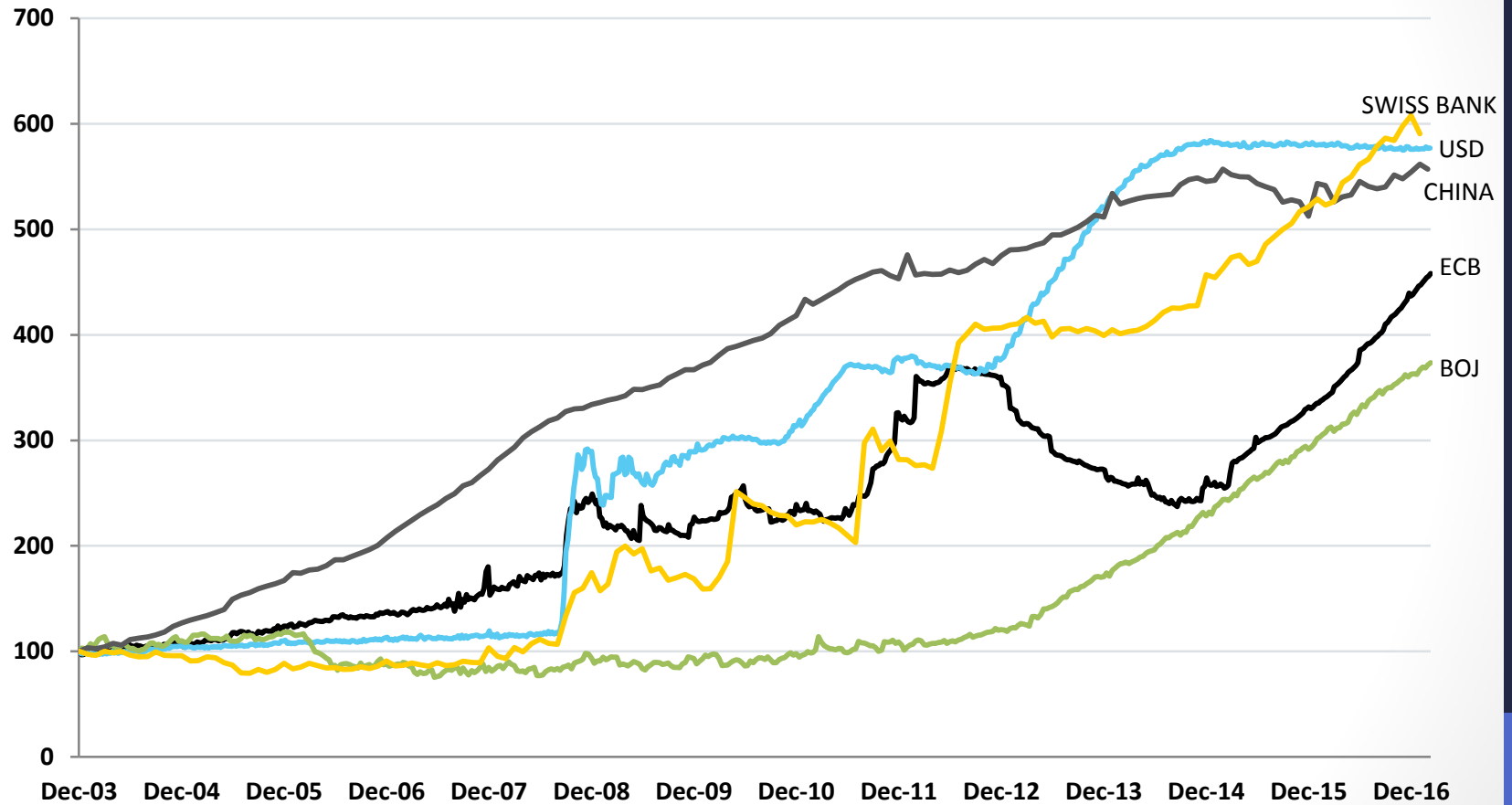


# BUT WHAT ABOUT DEBT AND DEFICITS?

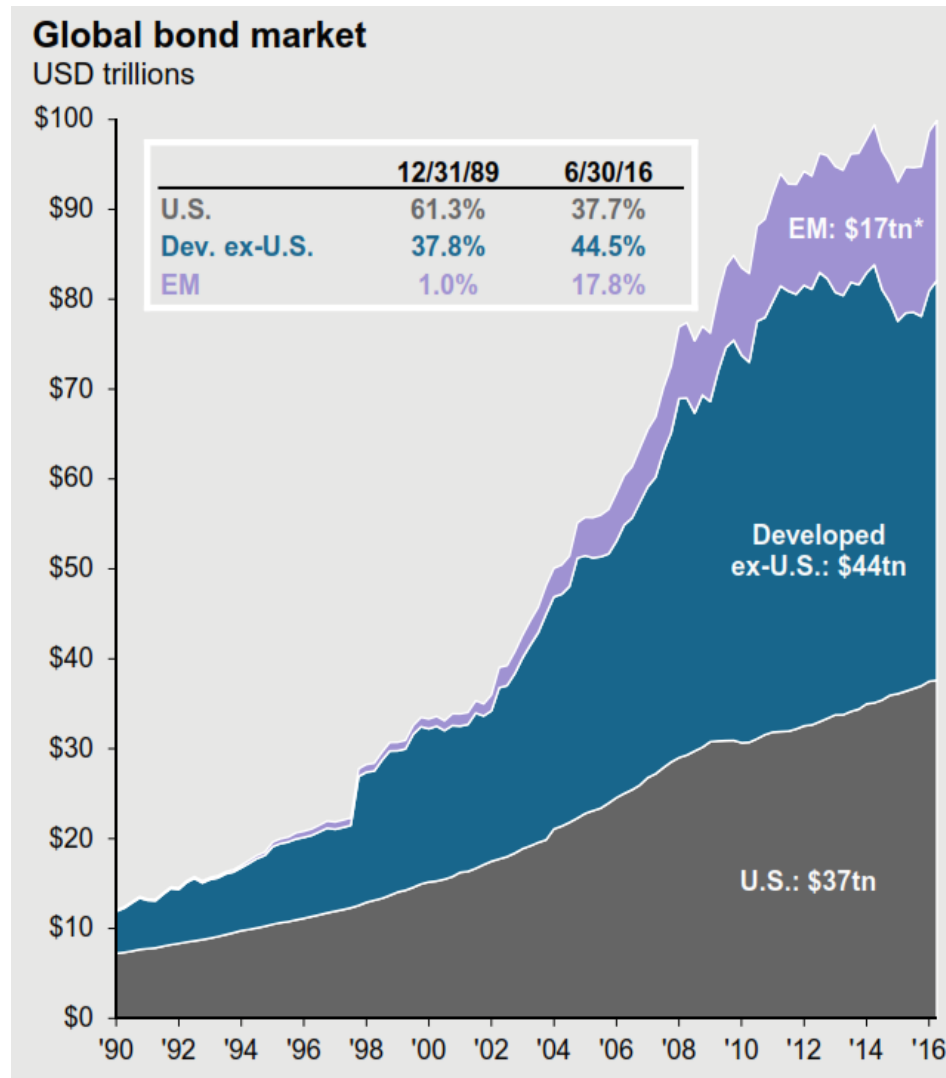


# CENTRAL BANK ASSETS

Normalized as of 1/02/2004



# GLOBAL BOND MARKET

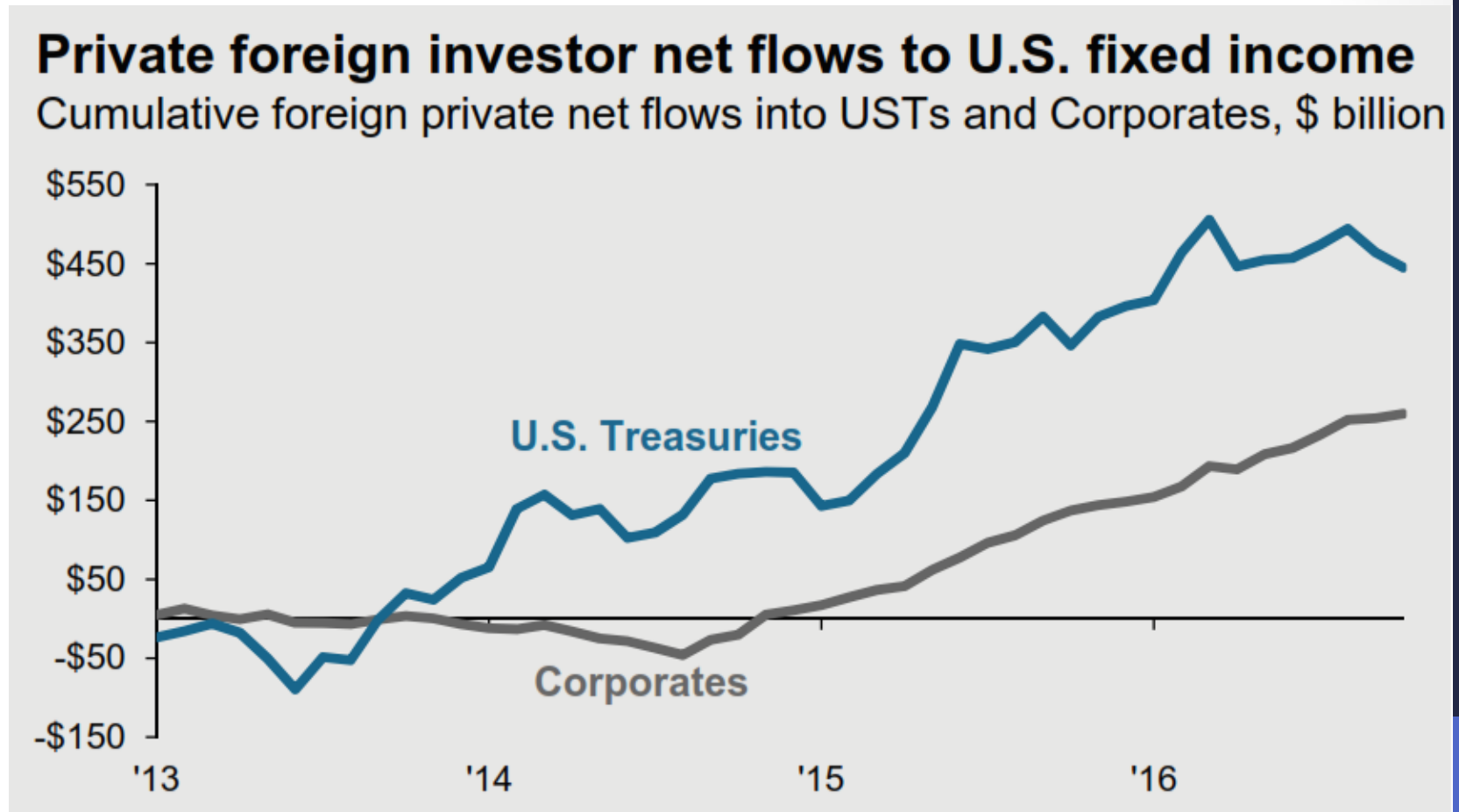


# GLOBAL BOND YIELDS

As of 8/31/17

	1Y	2Y	3Y	4Y	5Y	6Y	7Y	8Y	9Y	10Y	30Y
Switzerland	-0.84%	-0.80%	-0.73%	-0.63%	-0.54%	-	-0.36%	-0.28%	-0.20%	-0.13%	0.31%
Sweden	-0.78%	-0.59%	-0.40%	-0.19%	-0.01%	-	0.34%	0.48%	0.61%	0.73%	1.70%
Germany	-0.79%	-0.74%	-0.64%	-0.52%	-0.37%	-	-0.07%	0.08%	0.22%	0.35%	1.19%
Netherlands	-0.71%	-0.65%	-0.55%	-0.43%	-0.28%	-	0.03%	0.18%	0.33%	0.45%	1.18%
Finland	-0.73%	-0.63%	-0.50%	-0.36%	-0.20%	-	0.12%	0.27%	0.41%	0.54%	1.34%
France	-0.63%	-0.57%	-0.47%	-0.33%	-0.18%	-	0.15%	0.32%	0.48%	0.63%	1.71%
Belgium	-0.66%	-0.60%	-0.49%	-0.35%	-0.19%	-	0.14%	0.31%	0.46%	0.60%	1.70%
Austria	-0.66%	-0.58%	-0.47%	-0.33%	-0.18%	-	0.13%	0.28%	0.42%	0.55%	1.50%
Denmark	-0.67%	-0.65%	-0.48%	-0.40%	-0.27%	-	-0.01%	0.14%	0.31%	0.46%	1.05%
Japan	-0.16%	-0.17%	-0.16%	-0.14%	-0.14%	-0.12%	-0.09%	-0.07%	-0.03%	0.01%	0.82%
Spain	-0.46%	-0.30%	-0.11%	0.12%	0.37%	-	0.86%	1.10%	1.32%	1.51%	2.83%
Italy	-0.33%	-0.06%	0.24%	0.55%	0.86%	-	1.44%	1.69%	1.91%	2.09%	3.24%
Portugal	-0.36%	-0.02%	0.38%	0.80%	1.23%	-	2.02%	2.36%	2.65%	2.89%	3.85%
UK	0.14%	0.17%	0.20%	0.25%	0.44%	0.59%	0.68%	0.79%	0.93%	1.03%	1.70%
Canada	1.12%	1.25%	1.37%	1.47%	1.54%	-	1.69%	1.75%	1.83%	1.88%	2.25%
US	1.22%	1.33%	1.43%	-	1.70%	-	1.94%	-	-	2.12%	2.73%
Australia	1.66%	1.89%	2.05%	2.18%	2.24%	2.33%	2.46%	2.55%	2.62%	2.71%	3.54%

# CENTRAL BANKS AFFECT FLOWS TO U.S.



What's Next?

# OUR CAMPAIGNS HAVE NEVER BEEN FILLED WITH SUCH VITRIOL, RIGHT?



John Adams

**IF YOU ELECT THOMAS JEFFERSON**

**MURDER, ROBBERY, RAPE, INCEST, and ADULTERY** will be practiced throughout the land.

Are you prepared to see your dwellings in flames...**FEMALE CHASTITY VIOLATED**, or children writhing on the pike?

**JOHN ADAMS IS...**

...busy **IMPORTING MISTRESSES** from Europe or trying to marry one of his sons to a daughter of King George.

...a **HIDEOUS, HERMAPHRODITICAL CHARACTER** with neither the force or firmness of a man, nor the gentleness and sensibility of a woman.



Thomas Jefferson





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# TRUMP & YELLEN



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## POSSIBLE ADDITIONS

- Ron Paul – former Texas Representative
- John Taylor – the “Oz” behind the Taylor Rule
- John Allison IV – Cato Institute and former CEO of BB&T
- Paul Atkins – former SEC member
- Tom Hoenig – VC of FDIC, and former head of Kansas City Fed

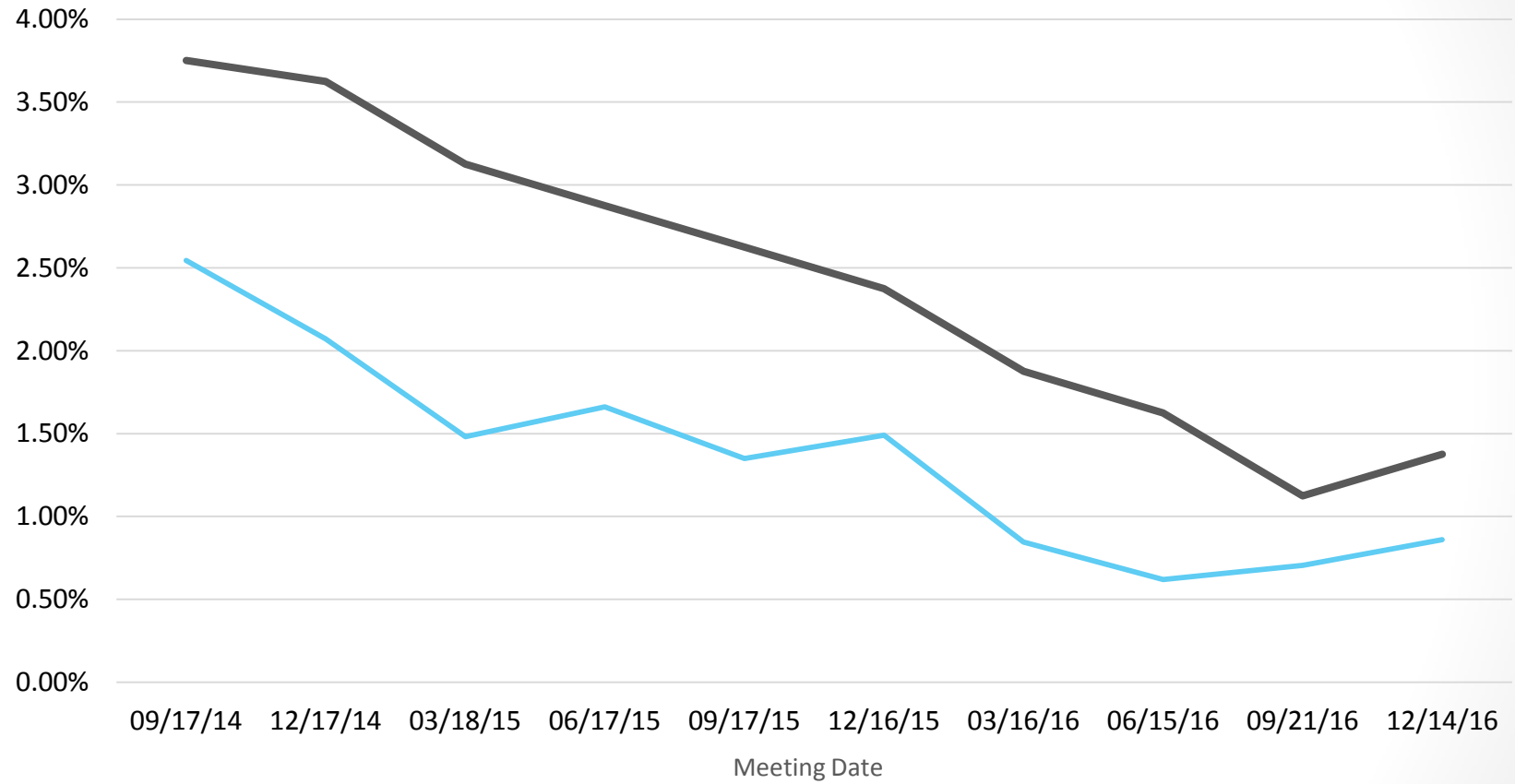
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# TRUMP AGENDA

- Affordable Care Act
- Infrastructure
  - Wants to spend \$1 trillion over 10 years
- Tax Cuts
  - Corporate tax cuts: 35% down to 20%
  - Individual tax cuts from 40% down to 30%, all others to fall as well
  - Repatriation (could be as high as \$2 trillion)
  - Fees on importers (border taxes)
- Dodd Frank

# FED "DOT PLOT" VS MARKET EXPECTATIONS

Historical projections for December 31, 2017



- The Median of the Federal Open Market Committee's Dots Data
- The Overnight Index Swap Implied Interest Rate as of the FOMC Meeting Date

Source: Bloomberg

# FEDERAL RESERVES ECONOMIC PROJECTIONS

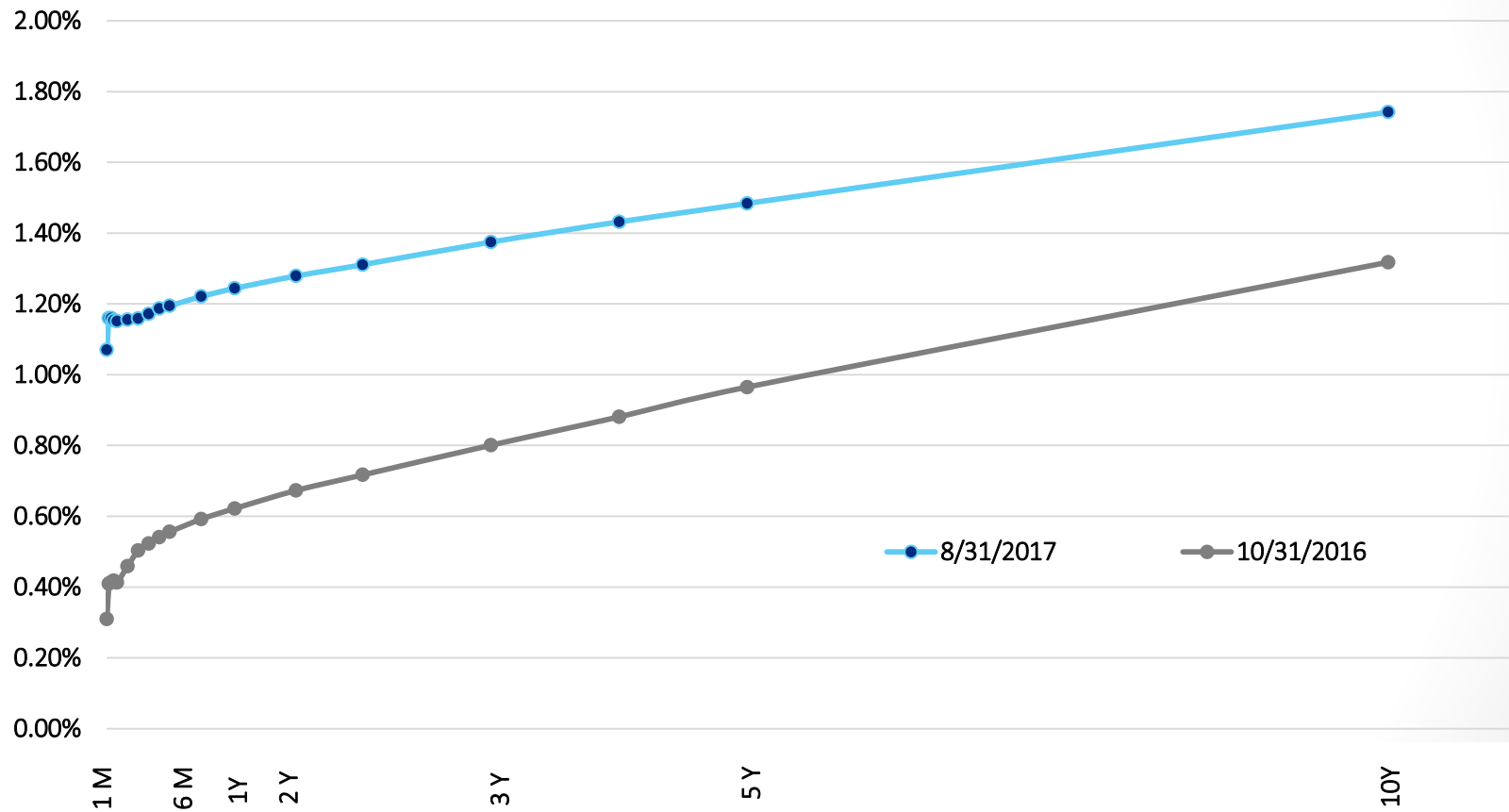
Federal Reserve Governors and Reserve Bank Presidents Forecasts

	2017 ESTIMATE	2018 ESTIMATE	2019 ESTIMATE	LONGER RUN
<b>REAL GDP RANGE</b>				
March 15, 2017	1.7% to 2.3%	1.7% to 2.4%	1.5% to 2.2%	1.6% to 2.2%
Dec. 14, 2016	1.7% to 2.4%	1.7% to 2.3%	1.5% to 2.2%	1.6% to 2.2%
<b>UNEMPLOYMENT RATE RANGE</b>				
March 15, 2017	4.4% to 4.7%	4.2% to 4.7%	4.1% to 4.8%	4.5% to 5.0%
Dec. 14, 2016	4.4% to 4.7%	4.2% to 4.7%	4.1% to 4.8%	4.5% to 5.0%
<b>PCE PRICE INDEX RANGE</b>				
March 15, 2017	1.7% to 2.1%	1.8% to 2.1%	1.8% to 2.2%	2.00%
Dec. 14, 2016	1.7% to 2.0%	1.8% to 2.2%	1.8% to 2.2%	2.00%
<b>FEDERAL FUNDS RANGE</b>				
March 15, 2017	0.9% to 2.1%	0.9% to 3.4%	0.9% to 3.9%	2.5% to 3.8%
Dec. 14, 2016	0.9% to 2.1%	0.9% to 3.4%	0.9% to 3.9%	2.5% to 3.8%

Source: Federal Reserve Board

# INTEREST RATE OUTLOOK

US Overnight Interest Rate Swaps



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THANK YOU

# Meeder Investment Management

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